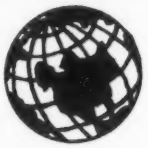
SPECTROSCOPIA MOLECULAR

UN PERIODICO MENSUAL DE NOVAS E INFORMATIONES DE INTERESSE E VALOR

AL SPECTROSCOPISTAS MOLECULAR

Volumine 6 | Junio 1957 | Numero 62



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SPECTROSCOPIA MOLECULAR ha essite redigite e publicate mensualmente depost Maio 1952 per Prof. Forrest F. Cleveland del Departimento de Physica del Instituto Technologic de Illinois in Chicago. Pro assecurar un plus facile lectura per le plus grande numero del spectroscopistas, le periodico es scribite in le lingua international, Interlingua. Manuscriptos e novas e informationes, tanto como abonamentos e ordines pro monographias, debe esser inviate a

Spectroscopia Molecular
Departimento de Physica
Instituto Technologic de Illinois
Chicago 16, Illinois, S. U. A.

Le texto original es legite per Dr. Alexander Gode, Chef del Division de Interlingua de Science Service (80 East 11th St., New York 3, N. Y., S.U.A.). Libros super Interlingua, disponibile ab ille adresse, es Interlingua-English Dictionary, Interlingua Grammar, Interlingua A Prime Vista, Interlingua in 20 Lektionen, Interlingua en 20 Leçons, Interlingua in 20 Lezioni, e Homo Sonetticus Moorensis (un bellemente imprimite parve libro de poemas con illustrationes).

Labor editorial es gratis. Le costo de preparation e distribution es recipite ab spectroscopistas, bibliothecas, e companias que beneficia del existentia de Spectroscopia Molecular. Il ha nulle altere medios de supporto. Omne le receptas es usate pro le mantenimento e melioration del periodico.

Assistentes de publication es Srta. Coleen Byrne e Srs. Jerome M. Dowling e Edward A. Piotrowski. Le imprimer es facite per Bernice, Jean, Lilly, Chicki, e Alice del Servicios de Bureau al Instituto Technologic de Illinois sub le direction de Srta. Virginia Brown.

Il ha 12 numeros per anno e le precio de abonamento es $2.25 nette ($2.00 si pagamento accompania le ordine). Volumines passate del annos 1952, 1953, etc. es $3.00 nette per volumine. Numeros individual es $0.25 per cata un. Le periodico pote esser inviate per posta aeree si le subscriptor provide le costo de postar additional. (Face cheques pagabile a "Spectroscopia Molecular".)

Companias pote attachar un pagina de informationes in re lor productos, si illos es de interesse a spectroscopistas molecular.

MONOGRAPHIAS. Duo monographias es disponibile. Illos es:

Spectros Molecular. I. Regulas de Selection pro Spectros Vibrational de Moleculas Polyatomic, per Forrest F. Cleveland, 1953, 25 paginas, $0.75 nette.

Spectros Molecular. II. Tractamentos del Coordinatas Normal de Moleculas Polyatomic, per Salvador M. Ferigle e Alfons Weber, 1955, 30 paginas, $1.00 nette.

SPECTROSCOPIA MOLECULAR

Volumine 6 — Junio 1957 — Numero 62

SPECTROSCOPISTAS DE FLUORESCENTIA VA ASSEMBLAR SE IN COLUMBUS

UN ASSEMBLEA de spectroscopistas fluorescentic va esser tenite le 13 de junio a 20:00 horas in camera 110 del edificio de physica al Universitate Ohio State a Columbus in Ohio. Le objectivo del assemblea es organisar un gruppo pro considerar le campo del spectroscopia fluorescentic e pro preparar recommendationes al Committee E-13 super le Spectroscopia Absorptionic del Societate American pro le Examination de Materias pro action additional.

Le necessitate pro le standardisation del nomenclatura, del presentation del spectros, del methodos de analyse per fluorescentia, e de un systema de indice pro datos de referentia ha essite exprimite per multe investigatores in iste campo de recerca.

In vista del activitates passate del Committee E-13 in standardisationes del spectroscopia ultraviolette, infrarubie, e visibile, e de systemas de indice, isto esseva requestate al Convention Pittsburgh super le Spectroscopia Applicate de arrangiar un assemblea de scientistas interessate ex le laboratorios universitari, industrial, e governamental, tanto como ex le companias instrumental, pro discuter un programma simile pro le labor de fluorescentia. Il esseva concludite que le melior tempore e placia pro tener un tal assemblea de organisation esserea in junio al Symposio Spectroscopic al Universitate Ohio State in Columbus.

Spectroscopistas interessate es cordialmente invitate a iste assemblea. Illes debe esser preparate a discuter brevemente le instrumentos pro le determination del datos de fluorescentia, e le methodos pro le presentation del datos, in lor labo-

(continuate al p. 35, col. 2) →

o-o-o-o-o-o-o-o-o-o-o-o- GEMMA de SAGESSA -o-o-o-o-o-o-o-o-o-o-o-o-o

CATA NOVE veritate per le qual le ordine del vita human es cambiate, e le qual move le humanitate in avantia, es al primo acceptate per solmente un multo parve numero del homines qui comprende lo per un intuition interne. Le alteres, qui acceptave per fide le veritate precedente super le qual le ordine existente esseva basate, semper oppone se al diffusion del nove veritate. Nonobstante, ... le homines le plus vicin a illes qui ha assimilate le veritate per un processo interne transi al nove veritate un per un, al primo lentemente e tunc plus rapidemente, usque le numero del homines qui admitte le nove veritate deveni plus grande e ancora plus grande e le veritate deveni de plus in plus comprendite. ... Le homines qui accepta un nove veritate, quando illo ha attingite un certe grado de dissemination, semper face lo subitemente e in massa.

— L. TOLSTOY,
Le Regno del Deo es Intra Vos.

CONFERENTIA SUPER CARBON AL UNIVERSITATE BUFFALO

UN TERTIE CONFERENTIA super carbon, organisate per le Universitate Buffalo, le statounitese Fundation National de Scientia, e le statounitese Officio de Recerca Naval, va esser tenite in Buffalo, New York, ab le 17 al 21 de junio.

Proprietates electronic de carbones essera tractate durante le prime 2 dies; le compositos, reactiones, e effectos de irradiation e tractamento caloric durante le sequente 2 dies; e le processar de carbones e lor proprietates a alte temperaturas durante le die final.

Octanta discursos essera presentate, 32 per parlatores ab ultramar. Le conferentia es assi vermente de un character international. Le programma complete con summarios essera disponibile post le 15 de maio. Le discursos essera publicate post le conferentia in le secunde volumine del Processos Verbal del Conferentias Super Carbon.

Autores del discursos es listate infra. Le nomine del parlator es date primo, quando isto es cognoscite.

H. Akamatu e H. Inokuchi; H. Akamatu e H. Kuroda (Tokio); R. C. Anderson e J. D. Frasee; A. E. Austin; G. E. Bacon (Harwell); R. Baroin(Paris); H. E. Blayden e A. F. Adamson (Newcastle); R. L. Bond e D. H. T. Spencer (B.C.U.R.A.); H. P. Boehm e U. Hofmann (Darmstadt); T. H. Brown e J. Turkevich; C. J. Calbick; A. Clauss (Bruxelles); F. M. Collins; F. J. Corbato; C. A. Coulson (Oxford); W.F. Courtiss; e R. C. Croft (Melbourne).

Alteres es: R. Diamond (Cambridge); X. Duval (Nancy); S. Ergun; L. M. Foster, G. Long e H. C. Stumpf; J. K. Galt, W. A. Yager, e F. R. Merritt; V. A. Garten e D. E. Weiss (Melbourne); R. R. Haering e P. R. Wallace; H. Tracy Hall; R. J. Harrison e A. E. Austin; K. Hedden e E. Wicke (Hamburg); G. R. Hennig; H. Hering, P. Cormuault e M. Seguin (Saclay); H. Honda (Tokio); J. G. Hooley; J. H. Hove; A. C. Hurley; D. J. E. Ingram (Southhampton); H. Inokuchi e D. D. Eley (Nottingham); P. Kiive e S. Mrozowski; C. R. Kinney, J. S. Conroy, D. B. Murphy, e R. S. Slysh; J. A. Krumhansl; J. L. Lundberg e L. S. Nelson; e L. E. Lyons, A. Bree e G. Morris (Sydney).

Alteres es; J. Maire e J. Mering (Paris); H. E. Martens, L. D. Jaffe, e J. O. Jepson; F. A. Matsen; J. T. McCartney e S. Ergun; J. W. McClure; R. E. Nightingale e W. A. Snyder; L. Meyer; R. A. Meyer e R. G. Bourdeau; S. Mizushima (Tokio); G. L. Montet e G. R. Hennig; S. Mrozowski, A. Chaberski, E. E. Loeber, e H. T. Pinnick; P. Nozieres, A. Pacault (Bordeauz); e J. Parisot e P. Albert (Paris).

Alteres es; W. B. Powell e P. F. Massier; B. Pullman (Paris); H. L. Riley e C. J. J. Baraniecki (Sheffield); E. J. Seldin; J. Simmons (Harwell); L. S. Singer, W. J. Spry, e W. H. Smith; F. T. Smith; C. W. Snow, D. R. Wallace, L. L. Lyon, e G. R. Crocker; D. E. Soule; C. N. Spalaris; T. Streznewski e J. Turkevich; M. Studebaker; V. H. Tiensuu e S. Ergun; A. C. Titus; T. Tsuzuku (Namerikawa); R. A. Ubbelohde (London); J. Uebersfeld (Paris); P. L. Walker, F. Rusinko, J. F. Rakszawski, L. M. Liggett, e S. B. Seeley; e D. C. Wobschall.

Pro informationes additional e pro formularios de registration e reservation, scribe a:

Prof. S. Mrozowski
Le Conferentia Carbon
Departimento de Physica
Universitate Buffalo
Buffalo 14, New York
Statos Unite de America. ô

LE UNIVERSITATE FISK va tener su 8ve Instituto Annue de Spectroscopia Infrarubie ab le 26 al 30 de augusto 1957. Le objectivo del instituto es introducer chimistas, biologos, physicos, e ingenieros al spectroscopia infrarubie e su usos in le recerca academic e industrial, e in le inseniamento.

Iste anno le facultate va includer:

- DR. EDWARD COVINGTON, Compania E. I. Dupont DeNemours:
- DR. DAVID N. KENDALL, Laboratories de Recerca Kendall;
- DR. VAN ZANDT WILLIAMS, Corporation Perkin-Elmer;
- DR. ERNEST A. JONES, Universitate Vanderbilt;
- DR. JAMES R. LAWSON, Universitate Statal Tennessee Agricole e Industrial; e
- DR. NELSON FUSON, Universitate Fisk.

Matinos va esser dedicate a discursos introductori, postmeridies a exercitios laboratorial, e vesperas a discursos super themas plus avantiate e specialisate. Facilitates laboratorial includera un varietate de spectrometros a singule e duple fasce e de recente designo commercial, le quales permittera le coperir de un region spectral ab le visibile al infrarubio remote.

In addition al introduction al methodos e scopo del spectroscopia infrarubie, le participantes del Instituto habera opportunitates ample durante le septimana pro discuter le problemas de lor proprie interesse particular con le facultate del Instituto.

Plus informationes, tanto como formularios de application, pote esser obtenite ab Nelson Fuson, Instituto de Spectroscopia Infrarubie, Universitate Fisk, Nashville 8, Tennessee, S. U. A. ♁

. . . FLUORESCENTIA . . . . .

(cont. ab p. 33, col. 2)

→ ratorios. Illes etiam debe presentar le requirimentos pro datos e methodos standard in lor campo particular.

M. V. OTIS, Chef
Subcommittee super Datos Standard
Laboratorios de Recerca
Compania Tennessee Eastman
Kingsport, Tennessee, S. U. A. ♁

NOVAS E MISCELLANEA

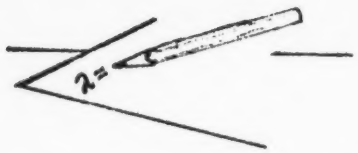
JEROME M. DOWLING ha recipite un subvention postdoctoral pro un anno de recerca al Consilio National de Recerca a Ottawa in Canada, comenciante in septembre 1957. Dr. Dowling, qui recipeva le grado Dr. phil. al Instituto Technologic de Illinois in junio, va laborar con Dr. B. P. Stoicheff in le Division de Physica Pur, del qual Dr. G. Herzberg es le chef.

-•-

ALFONS WEBER va devenir Professor Assistente de Physica al Universitate Fordham in le citate de New York in septembre. Dr. Weber, qui recipeva le grado Dr. phil. al Instituto Technologic de Illinois in junio 1956, passa le anno presente in le laboratorio de Prof. Welsh al Universitate Toronto como Fellow Postdoctoral.

-•-

INTERLINGUA es usate in le programma del 9ne Congresso International in re le Affectiones Rheumatic que va convenir in Toronto ab le 23 al 28 de junio. Le programma include 250 summarios. ♁



SPECTROS MOLECULAR. III.
TRACTAMENTOS DEL COORDINATAS NORMAL DE MOLECULAS POLYATOMIC
B. APPLICATIONES SPECIFIC

Forrest F. Cleveland, Arnold G. Meister, e Fred L. Voelz
Instituto Technologic de Illinois, Chicago 16, Illinois
Statos Unite de America

Parcella 16. Continuate ab Spec. Mol. 6 (1957) 31

7C. Constantes de Interaction de Ligamine con Angulo

LISTATE in iste section es le constantes de interaction de un ligamine con un angulo. Le constantes es del forma f_x^{yz}, con $\underline{x}$ (o $\underline{y}$ o $\underline{z}$ = $\underline{h}$, $\underline{f}$, $\underline{c}$, $\underline{b}$, o $\underline{i}$. Como in le previe sectiones, h = C-H o C-D, f = C-F, c = C-Cl, b = C-Br, e i = C-I. Le superscripto yz indica le angulo Y-C-Z, tal como H-C-H, H-C-Cl, Br-C-I, etc. Le $\underline{x}'$ indica un ligamine que es differente ab le ligamine $\underline{y}$ o le ligamine $\underline{z}$ que forma le angulo Y-C-Z. Le valores numeric es date in Tabula 7C-1.

Tabula 7C-1. Constantes de interaction de ligamine con angulo, in mdyn per rad.

f_h^{hh}

CH_2I_2	0,14850	CD_3I	0,22645
CH_3Br	0,15645	CH_2ClBr	0,22645
CH_2DBr	0,15645	$CHDClBr$	0,22645
CD_2HBr	0,15645	CD_2ClBr	0,22645
CD_3Br	0,15645	CH_2Br_2	0,22645
CH_3F	0,20000	$CHDBr_2$	0,22645
CH_2DF	0,20000	CD_2Br_2	0,22645
CD_2HF	0,20000	CH_2F_2	0,22645
CD_3F	0,20000	$CHDF_2$	0,22645
CH_3I	0,22645	CD_2F_2	0,22645

f_h^{fh}

CF_3H	0,15000	CH_3F	0,30547
CF_3D	0,15000	CH_2DF	0,30547
$CHFBr_2$	0,30001	CD_2HF	0,30547
CH_2F_2	0,30547	CD_3F	0,30547
$CHDF_2$	0,30547	$CHBrF_2$	0,32000
CD_2F_2	0,30547	$CDBrF_2$	0,32000

f_h^{ch}

CBr_2ClH	-0,07412	$CDBrCl_2$	0,26000
CBr_2ClD	-0,07412	CH_2ClBr	0,27299
CCl_3H	-0,08846	$CHDClBr$	0,27299
CCl_3D	-0,08846	CD_2ClBr	0,27299
$CHBrCl_2$	0,26000	-	-

f_h^{bh}

CBr_3H	-0,11696	CH_2ClBr	0,23249
CBr_3D	-0,11696	CD_2ClBr	0,23249
CBr_2ClH	-0,15000	$CHDClBr$	0,23249
CBr_2ClD	-0,15000	CH_2Br_2	0,23249
CH_3Br	0,06965	$CHDBr_2$	0,23249
CH_2DBr	0,06965	CD_2Br_2	0,23249
CD_2HBr	0,06965	$CHBrF_2$	0,23249
CD_3Br	0,06965	$CDBrF_2$	0,23249
$CHBrCl_2$	0,23000	$CHFBr_2$	0,23250
$CDBrCl_2$	0,23000	-	-

f_h^{hi}

CH_3I	0,40458	CH_2I_2	0,40458
CD_3I	0,40458	-	-

$f_h,^{hh}$

CH_3Br	-0,06855	CH_2DF	-0,07500
CH_2DBr	-0,06855	CD_2HF	-0,07500
CD_2HBr	-0,06855	CD_3F	-0,07500
CD_3Br	-0,06855	CH_3I	-0,096624
CH_3F	-0,07500	CD_3I	-0,096624

$f_h,^{fh}$

CH_2F_2	-0,15273	CH_2DF	-0,15273
$CHDF_2$	-0,15273	CD_2HF	-0,15273
CD_2F_2	-0,15273	CD_3F	-0,15273
CH_3F	-0,15273	-	-

CONSTANTES DE INTERACTION DE LIGAMINE CON ANGULO

$f_h, ^{ch}$			
CH_2ClBr	-0,091001	$CHDClBr$	-0,091001
CD_2ClBr	-0,091001	-	-

$f_h, ^{bh}$			
CH_3Br	-0,05535	$CHDClBr$	-0,077498
CH_2DBr	-0,05535	CD_2ClBr	-0,077498
CD_2HBr	-0,05535	CBr_2H_2	0,07750
CD_3Br	-0,05535	CBr_2HD	0,07750
CH_2ClBr	-0,077498	CBr_2D_2	0,07750

$f_h, ^{hi}$			
CH_3I	0,18458	CH_2I_2	0,18458
CD_3I	0,18458	-	-

f_f^{fh}			
CF_3H	0,43933	CH_2DF	0,44000
CF_3D	0,43933	CD_2HF	0,44000
$CHBrF_2$	0,43933	CD_3F	0,44000
$CDBrF_2$	0,43933	CH_2F_2	0,45725
$CHFBr_2$	0,44000	$CHDF_2$	0,45725
CH_3F	0,44000	CD_2F_2	0,45725

f_f^{ff}			
CF_2Cl_2	0,29270	CH_2F_2	0,41770
CF_2Br_2	0,37704	$CHDF_2$	0,41770
$CHBrF_2$	0,40000	CD_2F_2	0,41770
$CDBrF_2$	0,40000	CF_3H	0,41959
CF_3Cl	0,41770	CF_3D	0,41959
CF_3Br	0,41770	CF_4	0,42938
CF_3I	0,41770	-	-

f_f^{cf}			
CCl_3F	0,20000	CF_3Cl	0,30557
CF_2Cl_2	0,30557	-	-

f_f^{bf}			
CBr_3F	0,15000	CF_2Br_2	0,29605
CF_3Br	0,24665	$CHBrF_2$	0,29605
$CHFBr_2$	0,24732	$CDBrF_2$	0,29605

f_f^{fi}			
CF_3I	0,29545	-	-

$f_f, ^{fh}$			
CF_3H	-0,21967	CH_2F_2	-0,23759
CF_3D	-0,21967	$CHDF_2$	-0,23759
$CHBrF_2$	-0,21967	CD_2F_2	-0,23759
$CDBrF_2$	-0,21967	-	-

$f_f, ^{ff}$			
CF_4	-0,22008	CF_3I	-0,22339
CF_3Cl	-0,22339	CF_3D	-0,22440
CF_3Br	-0,22339	CF_3H	-0,22440

$f_f, ^{cf}$			
CF_3Cl	-0,15278	CF_2Cl_2	-0,15278

$f_f, ^{bf}$			
CF_3Br	-0,09272	$CHBrF_2$	-0,27382
CF_2Br_2	-0,27382	$CDBrF_2$	-0,27382

$f_f, ^{fi}$			
CF_3I	-0,11430	-	-

f_c^{ch}			
CCl_3H	0,18601	$CHDClBr$	0,18601
CCl_3D	0,18601	CD_2ClBr	0,18601
CBr_2ClD	0,18601	$CHBrCl_2$	0,25000
CBr_2ClH	0,18601	$CDBrCl_2$	0,25000
CH_2ClBr	0,18601	-	-

f_c^{cf}			
CCl_3F	0,30940	CF_3Cl	0,43000
CF_2Cl_2	0,31729	-	-

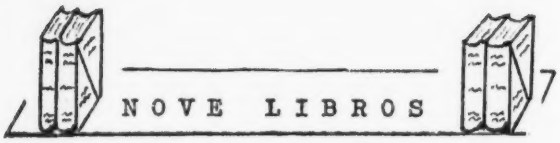
f_c^{cc}			
CBr_2Cl_2	0,36022	CCl_3D	0,36434
$CHBrCl_2$	0,36022	CCl_3H	0,36434
$CDBrCl_2$	0,36022	CCl_3F	0,36434
CF_2Cl_2	0,36040	CCl_3Br	0,36434
CCl_4	0,36434	-	-

f_c^{bc}			
CBr_2ClD	0,30000	CBr_3Cl	0,32007
CBr_2ClH	0,30000	$CHBrCl_2$	0,33700
CH_2ClBr	0,30000	$CDBrCl_2$	0,33700
$CHDClBr$	0,30000	CBr_2Cl_2	0,36022
CD_2ClBr	0,30000	CCl_3Br	0,42630

$f_c, ^{ch}$			
CCl_3H	-0,16400	$CHBrCl_2$	-0,19000
CCl_3D	-0,16400	$CDBrCl_2$	-0,19000

$f_c, ^{cf}$			
CCl_3F	-0,22571	CF_2Cl_2	-0,23360

(Va continuar in un numero futur)



• The Calculation of Atomic Structures (Le Calculation de Structuras Atomic). DOUGLAS R. HARTREE. John Wiley and Sons, 440 4th Ave., New York 16, N. Y.; o Chapman and Hall, London, Anglaterra; 1957. Paginas 181. Precio $5.00.

-

ISTE LIBRO es basate super un serie de discursos date al Collegio Haverford in 1955, e repetite plus tarde al Universitate Princeton. Illo es destinate a illes qui desira comprehender le methodos de calculationes quantitative in le structura atomic.

Es expectate que le lector ha un familiaritate general con le mechanica undic usque al theoria del atomo de hydrogeno. Nonobstante, alicunes de iste conceptos es summarisate in le prime capitulo.

Capitulos 2 e 3 es concernite con le derivation del equationes pro le structura de un atomo al approximation exprimite per le termino "campo internemente consistente", con o sin excambio.

Methodos pro solver iste equationes es date in capitulos 4-7. Relationes de energia, le extension relativistic, e approximationes melior es discutite in capitulos 8-10.

Resultatos de calculationes de structuras atomic de summarisate in appendice 1.

-•-

• Instrumental Analysis (Analyse Instrumental). PAUL DELAHAY. The Macmillan Company, 60 5th Ave., New York 11, N. Y.; 1957. Paginas 384. Precio $7.90.

-

DEL 15 CAPITULOS super le methodos de analyse instrumental, 3 tracta le spectroscopia emissionic, le spectrophotometria absorptionic, e le spectroscopia Raman.

• JUNIO 10-14. 11me symposio annue super le spectroscopia e le structura molecular. Columbus. (H. H. Nielsen, Universitate Ohio State, Columbus 10, Ohio, Statos Unite de America.)

• JUNIO 17-20. 3tie conferentia de carbon, includente un symposio "Ab Benzina a Graphite". Buffalo. (S. Mrozowski, Universitate Buffalo, Buffalo, New York, S. U. A.)

• JUNIO 17-28. Programma super le spectroscopia infrarubie: Technicas, junio 17-21; Applicationes, junio 24-28. (J. M. Austin, Summer Session Director, Room 7-103, Massachusetts Institute of Technology, Cambridge 39, Mass., S. U. A.)

• JULIO 8-10. 8ve symposio international de astrophysica. Thema: Lineas de Emission -- Stellas. Liege. (P. Swings, Instituto de Astrophysica, Universitate Liege, Liege, Belgica.)

• JULIO 9-13, Symposio del gruppo europee de spectroscopistas molecular. Freiburg. (R. Mecke, Instituto de Chimia, Hebelstrasse 38, Freiburg im Breisgau, Germania.)

• JULIO 30-AUGUSTO 3. Symposio super le ligage hydrogenic. Ljubljana. (D. Hadži, Kemični Instutut Borisa Kidriča, Slov. Akademije Znanosti in Umetnosti, Hajdrihova 19, Ljubljana, Yugoslavia.

• AUGUSTO 3-10. 2nde congresso international pro interlingua. Basel, Switza. (André Schild, Birmannsgasse 1, Basel, Switza.)

• AUGUSTO 26-30. 8ve instituto Fisk de spectroscopia infrarubie. Applicationes biologic. Nashville, Tenn. (N. Fuson, Departimento de Physica, Universitate Fisk, Nashville 8, Tenn.)

• 1958. Commission Juncte de Spectroscopia. Moscova, U.S.S.R.; o Ottawa, Canada. (P. F. A. Klinkenberg, Laboratorio Zeeman, Muidergracht 4, Amsterdam C, Hollanda.)

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It is also planned that this international journal shall be a medium for the prompt publication of short communications, reports on spectroscopic meetings, reviews, and official reports of International Commissions. It is hoped to publish monthly issues, with a delay of not more than three months after receipt of manuscripts.

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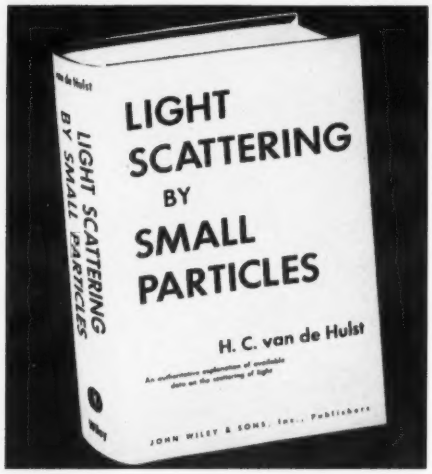

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Wave Propagation in a Medium Containing Scatterers.
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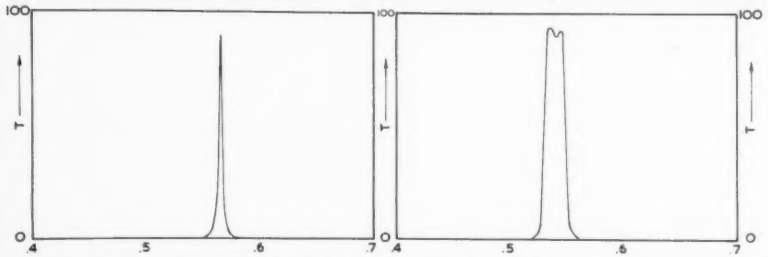

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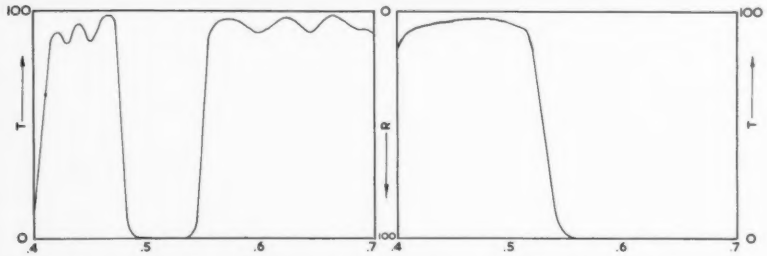

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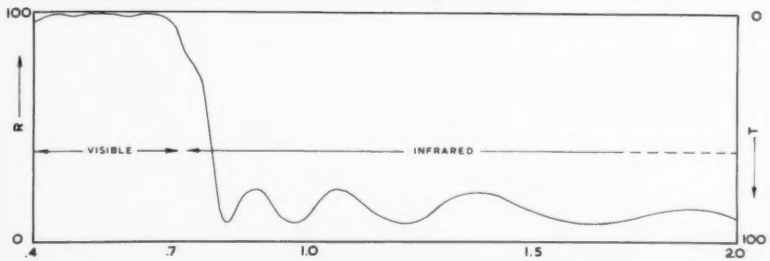

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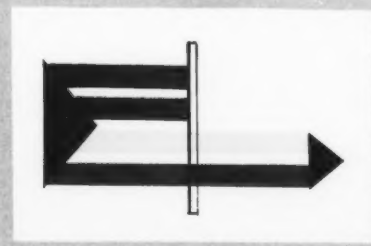

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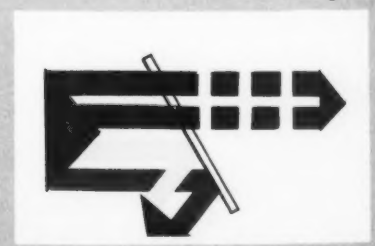

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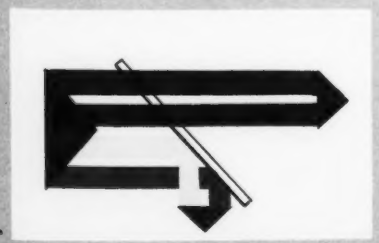

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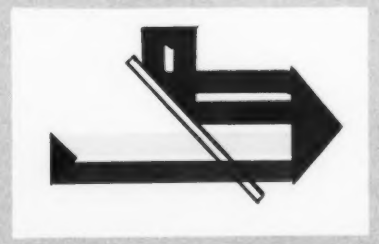

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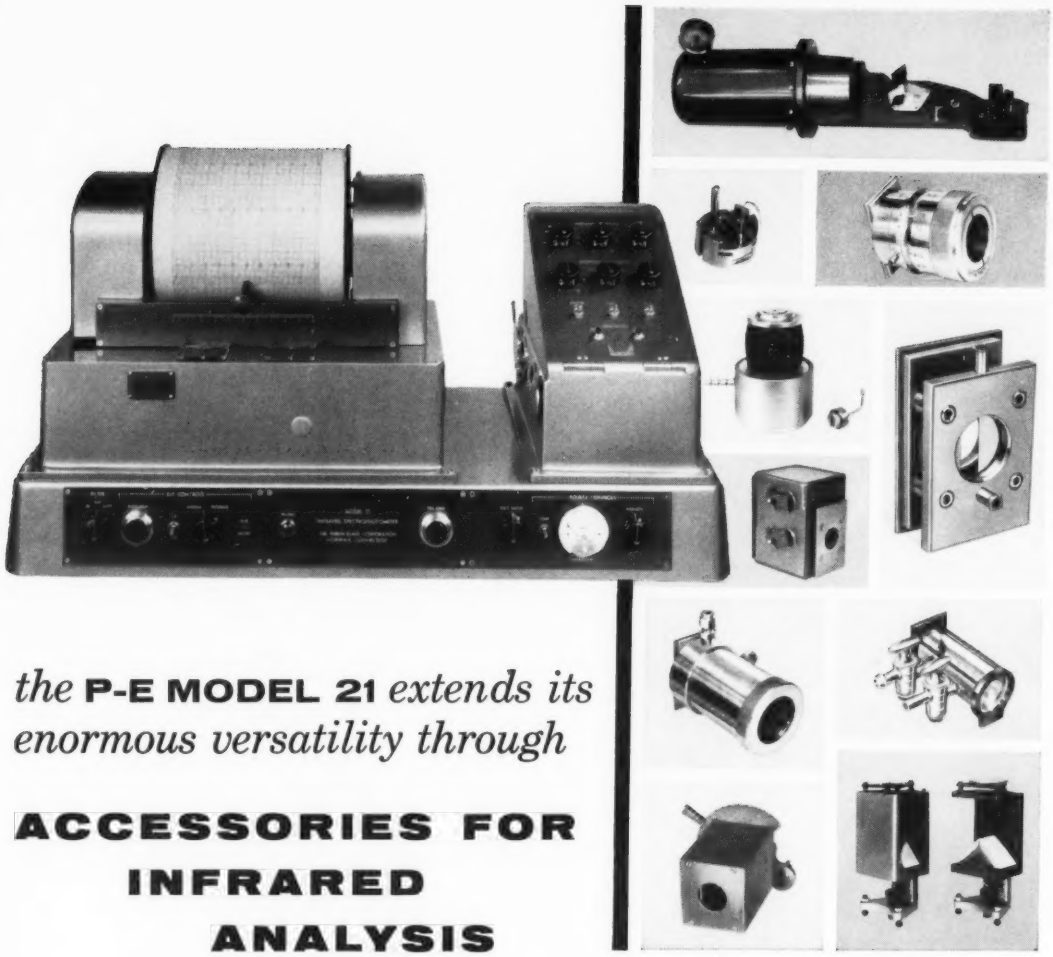

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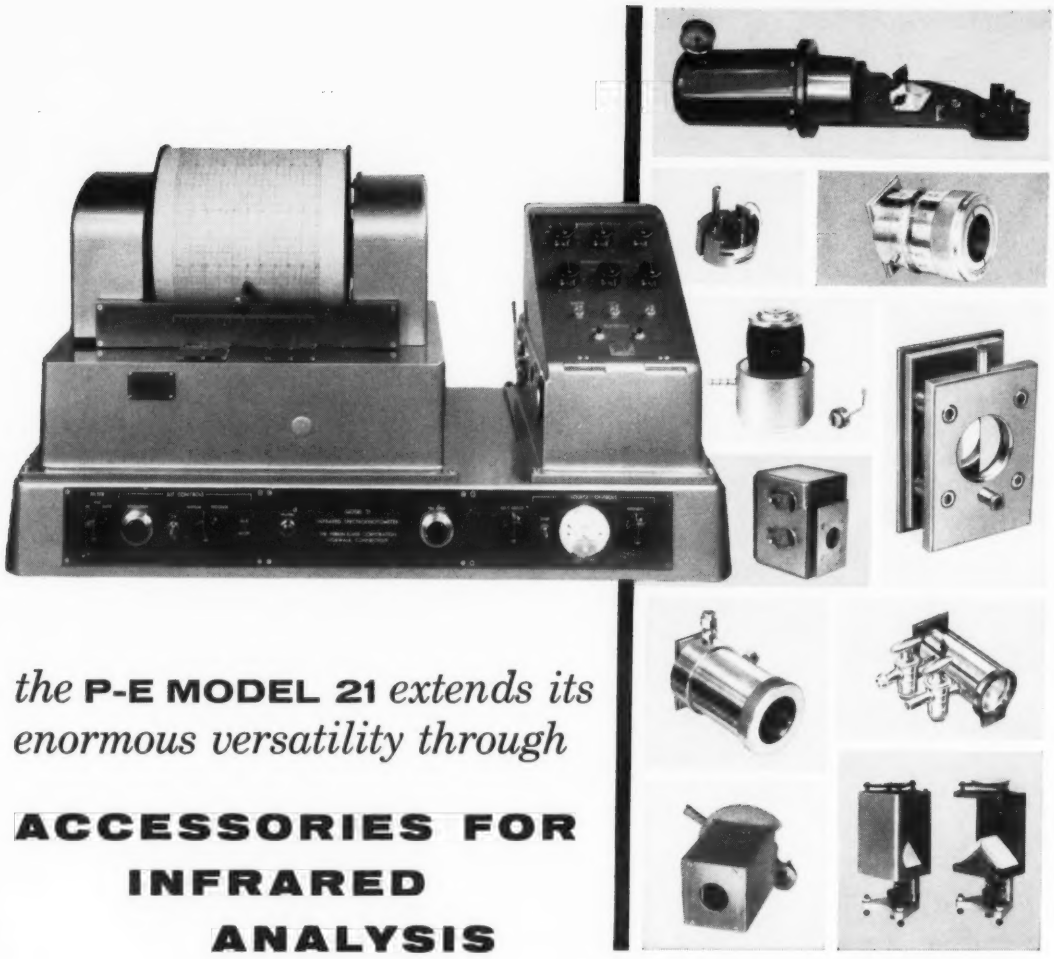

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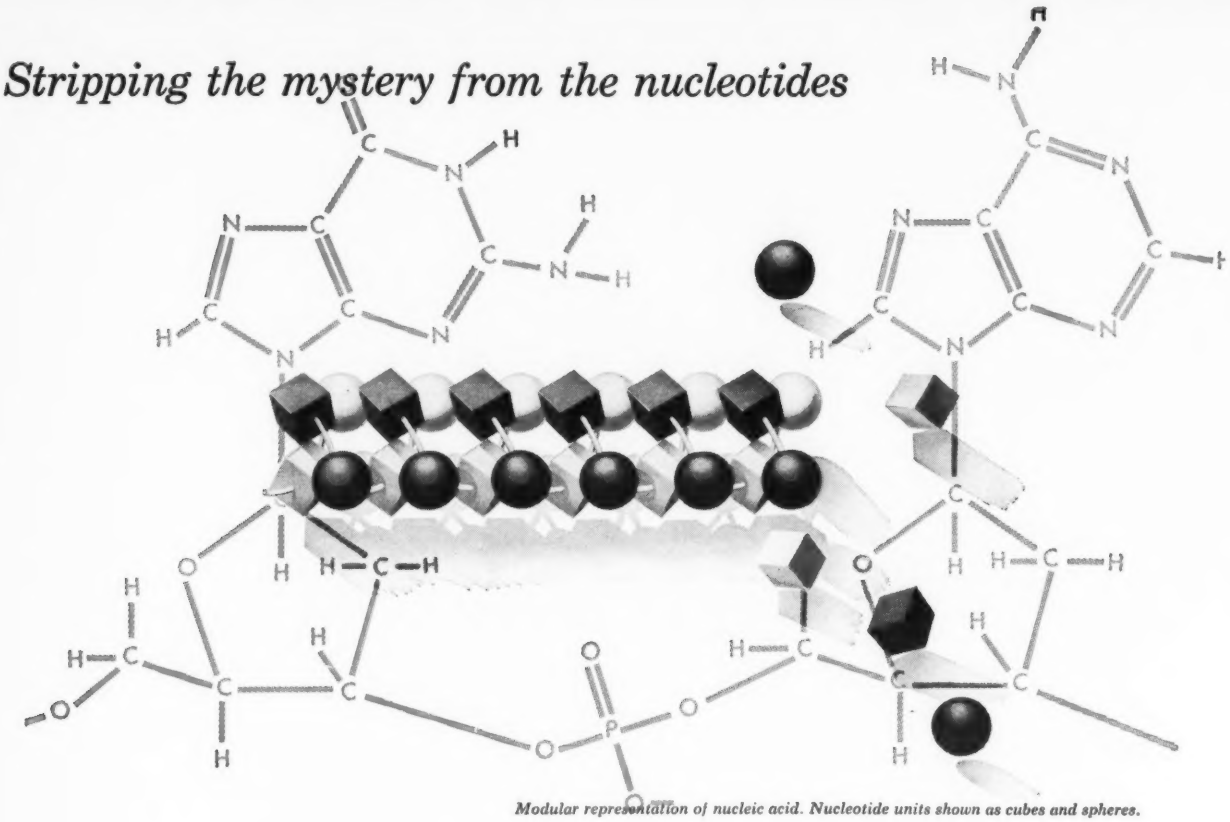

Modular representation of nucleic acid. Nucleotide units shown as cubes and spheres.

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In the important research effort now devoted to nucleic acid, scientists depend heavily upon ultraviolet spectroscopy. Leaders in this expanding area of investigation rely particularly on such instruments as the Beckman DK-2 Automatic Recording Spectrophotometer, which makes possible precise analytical studies that would be too time-consuming even to attempt with manual instruments.

In a typical application of this instrument, comparative ultraviolet spectra recently underlined the importance of a major development. Discovery of an enzyme that transforms mononucleotides into polynucleotides resulted in synthesized nucleotides which behave like nucleic acids. Their structural similarity confirmed by analysis with the Beckman DK-2 Recording Spectrophotometer, these synthesized nucleotides have aroused tremendous interest among biochemists, since nucleic acids are believed deeply involved in key phases of the life process itself.

To researchers probing such mysteries, the Beckman DK-2 Automatic Recording Spectrophotometer is an indispensable tool. Its speed and precision are breaking the "time barrier" in chemical research involving analysis in the ultraviolet, visible and near infrared ranges. For details, see your Beckman dealer, or request Data File L-18-15.

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SECOND SUPPLEMENT TO CRYSTAL OPTICS CATALOG

Crystal polarizing prisms are now available in rotatable mounts having divided circles of various graduations. The usual circular accuracy of mounted Nicol type prisms is of the order from 5 minutes to 1 minute of angle. For greater accuracies it is recommended that the Glan Thompson type prisms be used.

The polarizing unit pictured in our photo consists of a Glan Thompson prism mounted in a rotatable circle which is read by means of a single vernier directly to 30 seconds of angle. The ultimate setting accuracy is dependent upon the brightness of the source of illumination observed. Using a bright filament source (6 volt incandescant bare filament lamp) the setting accuracy of the prisms in the crossed condition is better than 10 seconds of angle. The setting criterion is, of course, the complete extinction of the filament offered by the Glan Thompson prisms in the crossed condition.

The use of a half-shade device such as the Lippich prism used in collimated monochromatic light transforms the match point to one of a photometric match of two or three equally spaced adjacent fields of illumination. The sensitivity is variable, being dependent upon the half shadow angle which in turn determines the illumination level at which the fields will match. Polarimeters are designed using both fixed and variable half shadow angles. With the sacrifice of sensitivity, by use of a large half shadow angle, one is able to measure rotations of the plane of polarization of materials of low transmission.

Maximum sensitivity occurs obviously at zero half shadow angle but at a minimum of illumination level. In practice, some arbitrary setting of the half shadow angle is made by the observer suitable to the material. Accuracies of better than 10 seconds of angle at zero half shadow angle using a bright mercury source (G.E. AH4 lamp) can be achieved.

We do not carry these complete units in our regular stock but manufacture them to order. Glan Thompson and Lippich prisms are available, however, from stock and can be delivered upon short notice. Circles are available reading directly to 15 seconds by means of two diametrically spaced verniers, or to 5 seconds by means of two external microscopes.

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AHRENS PRISMS

The ratio of transmitted light to the incident light passed by a pair of polarizing prisms of the Ahrens type, crossed exactly at 90 degrees was determined after exhaustive measurements to be of the order of 4 to 6 parts in 100,000.

Ahrens prisms can be set to extinction at crossed condition to accuracies approaching 5 seconds of angle. This compares unfavorably with a setting accuracy of 1 second obtainable with selected pairs of Glan Thompson type prisms, and a 1000W AH4 or BH4 G.E. mercury source.

As a complete polarizer the Ahrens prism is less desirable than the Glan Thompson type. This is probably due to residual strains set up by the two additional cemented interfaces and the cemented front face glass coverplate. The only advantage of the Ahrens type polarizer is its larger angular field of polarization.

We should be pleased to quote you on your requirements.

Yours very truly,

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